THE FIRST RECORDINGS OF CALLS OF THE JERDON'S COURSER *RHINOPTILUS BITORQUATUS* (BLYTH), FAMILY GLAREOLIDAE[1]

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The call of the Critically Endangered Jerdon's Courser (*Rhinoptilus bitorquatus*) was unknown until now. The short disyllabic call attributed to the Jerdon's Courser was recorded and identified within the Sri Lankamaleswara Wildlife Sanctuary during dawn and dusk. Details of the calling period, duration of the call and spectrogram are given.

Key words: Jerdon's Courser, *Rhinoptilus bitorquatus*, call recording, call description, spectrogram

INTRODUCTION

Jerdon's Courser *Rhinoptilus bitorquatus* (Charadriiformes: Glareolidae) is a nocturnal cursorial bird that has been categorized as Critically Endangered on the IUCN Red List (Hilton-Taylor 2000), because it is believed to have a small and declining population. It was thought to be extinct for more than 80 years until its rediscovery in 1986 (Bhushan 1986). Since then, it has been seen in only a few restricted areas of the scrub jungle in Andhra Pradesh, India (BirdLife International 2001). Jerdon's Coursers are difficult to see because of their nocturnal habits, and this has hampered efforts to survey the population size and distribution of the species. Many areas in and around the Sri Lankamaleswara Wildlife Sanctuary have habitats that are superficially similar to places where Jerdon's Coursers are known to occur. A new method has been developed for detecting their presence by placing tracking strips upon which the birds leave their distinctive footprints (Jeganathan *et al.* 2002). Surveys using this method have recently detected the species in some new areas, but more rapid surveys might be possible if the bird's calls could be recognized. The only published reports on the calls of the Jerdon's Courser are "a plaintive cry" (Ali and Ripley 1983), "very sad; a single note and very soft" (Bhushan 1990), "not very vocal; plaintive cry: he-he-he-he-he" (Kazmierczak and van Perlo 2000) and "kwick- kweek- kwick- kweek- kweek- kweek- kweek", as described by some bird trappers (Samant and Elangovan 1997). The latter description, however, was thought to be more likely that of the Stone-curlew *Burhinus oedicnemus* (Samant and Elangovan 1997). This paper describes a successful effort at identifying and recording calls of the Jerdon's Courser.

METHODS

Since the Jerdon's Courser is nocturnal, efforts were made to listen for, and record, its calls during dawn and dusk in the places where it was known to occur in the Sri Lankamaleswara Wildlife Sanctuary, near Reddipalle, Cuddapah district, Andhra Pradesh, India (Jeganathan *et al.* 2002). Calls were monitored from about sunset to about 80 minutes after sunset, and from about 80 minutes before sunrise up to sunrise.

To discriminate the Jerdon's Courser calls from those of the other birds in the Sanctuary, it was necessary to eliminate the calls of other species. Other crepuscular and nocturnal species that are now known to occur within the Sri Lankamaleswara Wildlife Sanctuary are Red-wattled Lapwing *Vanellus indicus*, Stone-curlew, Eurasian Eagle-owl *Bubo bubo*, Collared Scops-owl *Otus bakkamoena*, Spotted Owlet *Athene brama*, Indian Jungle Nightjar *Caprimulgus indicus*, Jerdon's Nightjar *Caprimulgus atripennis*, Common Indian Nightjar *Caprimulgus asiaticus* and Franklin's Nightjar *Caprimulgus affinis*. Since the beginning of the study, the calls of these species have been recorded and catalogued along with the calls of other species occurring in the Sanctuary, which could possibly be confused with that of the Jerdon's Courser.

The recording equipment used was a Marantz PMD222 tape recorder with an Audio Technica AT815 unidirectional microphone, with no sound filters. Searches, listening and recording were carried out mainly during clear still nights. Recordings of calls were analyzed using the Canary 1.2.4 sound analysis package (Charif *et al.* 1993) on a Power Macintosh.

RESULTS

A call of the type that was later attributed to the Jerdon's Courser was heard (by PJ) on February 17, 2001, within the core area for Jerdon's Courser sightings in the Sri Lankamaleswara Wildlife Sanctuary. A Jerdon's Courser was sighted in the direction of the call a few seconds after it was heard. Unfortunately, it was not possible to get a recording of this call. Identical calls were heard again on June 19, October 22 and October 25, 2001, but no birds were seen and no recordings were obtained.

The first recording of the call was obtained on November 12, 2001 at 1812 hrs local time and again on November 13, 2001, at 1820 hrs, although the calling bird was not seen on either occasion. On November 14, 2001 the call was heard again twice, at 1816 hrs and a Jerdon's Courser was seen briefly (by SW) where the call was heard from. The bird flew off when illuminated by a spotlight and called twice in flight. Final confirmation that the call was made by a Jerdon's Courser was obtained on May 17, 2002 at 1818 hrs (by PJ), when a Jerdon's Courser was observed while it was calling, before dusk in ample sunlight. The distance between the observer and the bird was not more than 50 m in all of these instances.

Description of the call: The short disyllabic call consists of a high-pitched first syllable, and rapidly descending second syllable, which can be rendered as either "kwik-koo ... kwik-koo ... kwik-koo ... kwik-koo..." or "yak-wak ... yak-wak ... yak-wak ... yak-wak...". We refer to each pair of syllables as a call. Birds have been heard to give between 2 and 16 calls in a sequence at a rate of about one call per second. On one occasion, the first syllable of the single call was heard several times and then the bird spontaneously called, "kwik...kwik...kwik...kwik...kwik...kwik-koo...kwik-koo...".

The calling period is quite brief, starting 45-50 minutes after sunset and continuing for a few minutes to about 20 minutes. Calls were often heard from more than one place. At the most, they were heard from three different places up to about 200 m apart within a period of a few minutes. The possibility of the same bird moving and calling in such a case was unlikely, because of the pattern of calling in some instances. It has been estimated that the call can be heard from a distance of 200 to 250 m. It appears that the birds call mainly at dusk, but the frequency of calling is likely to depend upon the time of year and the weather.

Figure 1 shows a spectrogram of a single Jerdon's Courser call, consisting of two repeated syllables, each separated by an interval of 60 milliseconds (mS). The majority of the energy within the Jerdon's Courser call occurs between 1 and 4 kHz, with the syllables showing three distinct bands throughout the frequency range. In effect, there are three notes at three different frequencies (1 kHz, 2 kHz, 3.5 kHz), which make up each syllable. The calls are repeated in a series with gaps of about 500 mS between the end of one call and the beginning of the next (Fig. 2).

DISCUSSION

The call recorded by us does not resemble closely any of the previous verbal descriptions. These may refer to calls not detected by us so far, or the previous identifications may have been mistaken. The identified call of the Jerdon's Courser may be of value as it could

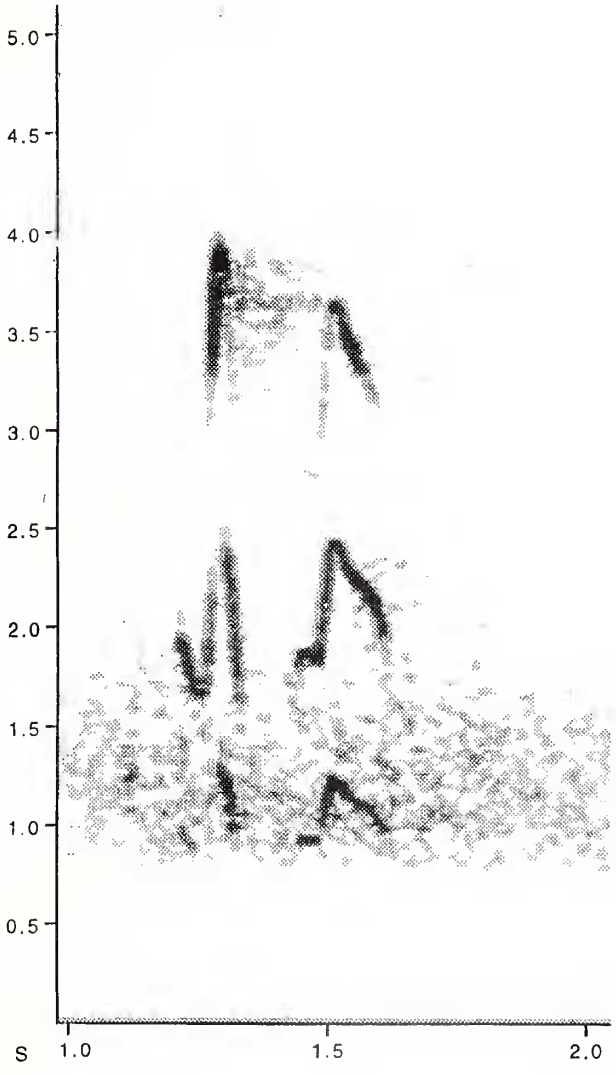

Fig. 1: Spectrogram (time v. frequency) of a complete Jerdon's Courser call showing 2 syllables separated by an interval. The spectrogram was produced by Canary 1.2.4, grid resolutions 5.8 ms, 10.77 Hz. [Y-axis=kHz, X-axis=S].

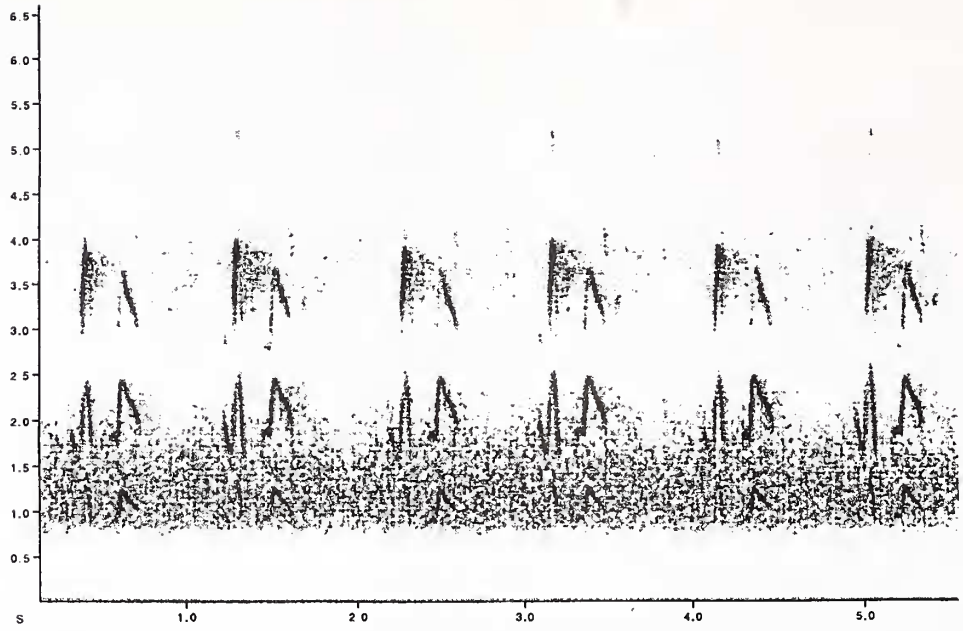

Fig. 2: Spectrogram of a series of six Jerdon's Courser calls. The spectrogram was produced by Canary 1.2.4, grid resolutions 5.8 ms, 10.77 Hz. [Y-axis=kHz, X-axis=S].

help to find the bird in new areas and estimate its population size. It appears that Jerdon's Coursers call mainly at dusk and it may be possible to survey their distribution by listening for the calls. However, initial observations indicate that the short period during which the birds call and the variation among evenings in whether they call at all would make it difficult to survey large areas.

Experiments are in progress using standard playback methods (e.g. Mosher *et al.* 1990; Haug and Diduik 1993) to determine whether tape playback could be used to elicit calls over a longer period. It is hoped to determine the effects of time of the year, time of day and weather on the bird's response to playback.

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